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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,570	01/04/2001	Shunji Baba	1381.1005	2008

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EXAMINER

ROMAN, ANGEL

ART UNIT

PAPER NUMBER

2812

DATE MAILED: 04/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/753,570

Applicant(s)

BABA ET AL.

Examiner

Angel Roman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6,8-14,29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6,8-14,29 and 30 is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Higashi et al. U.S. Patent 5,918,113.

Higashi et al. discloses a method of supplying an underfill material 20 for a semiconductor chip, comprising; locating a wafer 50 which receives a conductive bump 54 on an upward front side; and transferring an underfill material sheet 20 adhered to a surface of a thin film member 26 onto the upward front side of the wafer 50 (see figure 10 (c) and 12(a)). The wafer 50 is reversed and diced from a backside (see figure 10(d)).

3. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Machida et al. U.S. Patent 5,972,780.

Machida et al. discloses a method of supplying an underfill material for a semiconductor chip, comprising; locating a wafer 103 which receives a conductive

bump 21 on an upward front side (see figure 3A); transferring an underfill material sheet 20 adhered to a surface of a thin film member 10 onto an upward front side of the wafer 103. The underfill material sheet 20 is urge onto the upward front side of the wafer 103 after softening the underfill material sheet 20 when transferring the underfill material sheet 20 onto the wafer 103 (see figure 3B); and peeling the thin film member 10 from the underfill material sheet 20 after hardening the underfill material sheet 20 (see figure 3C).

Response to Arguments

4. Applicant's arguments filed 02/03/03 have been fully considered but they are not persuasive. Regarding Applicant's arguments that the adhesive film 20 in Higashi et al. is only transferred to substrate 60 and not to wafer 50 and that the adhesive layer 20 in Higashi et al. is not an underfill material sheet, Higashi et al. clearly teaches transferring the adhesive film 20 to the wafer 50 (see figure 12a) and the adhesive layer 20 is an underfill material sheet (see column 3, lines 45-65).

With respect to Applicant's arguments that Machida et al. does not disclose the use of an underfill material, Machida et al. clearly discloses using a dielectric film 20 as an underfill sheet layer applied to conductive bumps 21 (see column 5, lines 30-45). Applicant further argues that Machida et al. does not teach or suggest the use of conductive bumps on a wafer, Machida et al. clearly discloses using aluminum interconnections 21 which are also conductive bumps on a wafer 9. In response to applicant's argument that the references fail to show certain features of applicant's

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invention, it is noted that the features upon which applicant relies (i.e., using the conductive bumps to connect a chip and a printed circuit board) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Allowable Subject Matter

5. Claims 6, 8-14, 29 and 30 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter: The prior art either singularly or in combination failed to anticipate or render obvious the limitations of transferring a resin sheet to a backside of a wafer as required by claim 6; determining a cutting position based on an x-ray penetrating through the wafer as required by claim 8; and adhering an underfill material sheet to an upward front side of a wafer, reversing the wafer and dicing the wafer from the backside as required by claim 11.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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8. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel Roman whose telephone number is (703) 306-0207. The examiner can normally be reached on Monday-Friday 8:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

AR
April 21, 2003


John F. Niebling
Supervisory Patent Examiner
Technology Center 2800